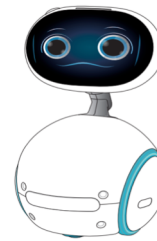# Cybersecurity Education Using Interactive Storytelling with Social Robots

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https://www.eecis.udel.edu/~cshen/Zenbo

Zenbo Social Robot

A social robot designed and manufactured by Asus. Zenbo is a robot for home and office use, which provides educational, personal assistant, entertainment, and other functions through voice and touch operations.

- **Challenges**
    - Online threads are sophisticated and dangerous making children and their families vulnerable to online risks
    - Educating children at an early age of the dangers that lurk online becomes critical for safeguarding against them and for becoming responsible digital citizens
    - There is scarcity of comprehensive cybersecurity education programs, curricula, or material that is **engaging** for elementary aged students

- **Impacts**
    - Designed a process for iteratively developing interactive stories on key cybersecurity topics that are engaging for students
    - Demonstrated that storytelling is a viable means to advancing student learning by taking complex ideas and presenting them in simpler and actionable steps
    - *"I learned that, don't use your birthday if you are making a password, because that is the most common thing someone that's trying to get into your computer will try, so try to make something that's unique to you, but not your birthday"*
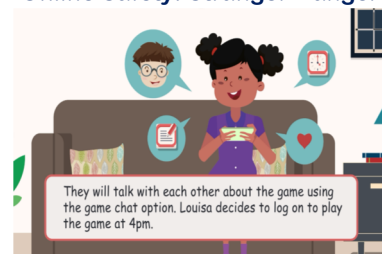
Password: Little Red Riding Hood

Phishing: Captain Cyber
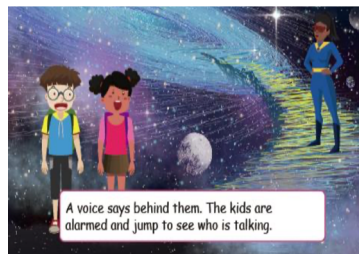
Online Safety: Stranger Danger

Given the wide attention on cybersecurity in the workforce, this work will serve as a model for promoting changes in K-12 education in a manner that supports student learning of cutting-edge technologies

- A model for cybersecurity education for elementary aged students
- The process of developing the interactive stories as well as the coding and algorithms developed for Zenbo will be applicable to other social robots

Engaging students with cybersecurity education at an early age is essential for enhancing awareness, exploring future career opportunities, and broadening participation in computing